

Day 6: Word Problems

1. How long does it take for an investment to double in value if it is invested at 8% per annum compounded monthly? Compounded continuously?
2. If Akul has \$100 to invest at 8% per annum compounded monthly, how long will it be before he has \$150? If the compounding is continuous, how long will it be?
3. How many years will it take for an initial investment of \$10,000 to grow to \$25,000? Assume a rate of interest of 6% compounded continuously
4. Sears charges 1.25% per month on the unpaid balance for customers with charge accounts (compounded monthly). A customer charges \$200 and does not pay her bill for 6 months. What is the bill at that time?
5. Rupert will be buying a new car for \$15000 in three years. How much money should he ask his parents for now so that, if he invests it at 5% compounded continuously, he will have enough to buy a new car?
6. A business purchased for \$650000 in 1994 is sold in 1997 for \$850000. What is the annual rate of return for this investment?
7. Tanya has just inherited a diamond ring appraised at \$5000. If diamonds have appreciated in value at an annual rate of 8%, what was the value of the ring 10 years ago when the ring was purchased?
8. On January 1, Kim places \$1000 in a certificate of deposit that pays 6.8% compounded continuously and matures in 3 months. Then Kim places the \$1000 and the interest in a passbook account that pays 5.25% compounded monthly. How much does Kim have in the passbook account on May 1?